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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,816	12/22/2000	Gerald F. Kruegler	FREUN-120XX	8690

207 7590 10/04/2002

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EXAMINER

BEFUMO, JENNA LEIGH

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 10/04/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/745,816

Applicant(s)

KRUEGLER, GERALD F. 

Examiner

Jenna-Leigh Befumo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 16 is indefinite. It is unclear how the multi-filament fiber layer is structurally related to the film layer. Is the multi-filament layer a woven fabric coated with a film layer? Or is the film layer reinforced with filaments?

4. The term "mechanically binding fibers" is interpreted as fibers which form entanglements with other fibers as a result of needle-punching, based on the definition in the specification on page 5, lines 18 – 24.

5. The term "chemically binding fibers" is interpreted as fibers which bind other fibers together by melting and encapsulating other fibers in the matrix at their cross-over points.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3, 4, 8, 9, 12, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lickfield et al. (5,804,512).

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Lickfield et al. discloses a nonwoven laminate comprising a meltblown web layer sandwiched between two outer web layers (column 2, lines 29 – 30). The outer web layers can be a spunbonded nonwoven web or a web formed of staple fibers (column 2, lines 31 – 33). The meltblown layer correspond to the Applicant's fusible nonwoven layer. The meltblown layer can be made from polyester (column 2, line 40). The first outer ply is a spunbonded nonwoven layer which corresponds to the Applicant's backing layer (column 3, lines 55 – 57). The second outer ply is a carded staple fiber layer comprising a mixture of thermoplastic fibers and absorbent fibers such as cotton or wool (column 4, lines 9 – 23). The second outer ply corresponds to the Applicant's nonwoven fleece layer. The three layers are bonded together by thermal bonding (column 4, lines 64 – 65). In other words, all three layers include fusible fibers which are heated to bond the layers together. Finally, the spunbonded layer will inherently have a greater strength and dimensional stability than the carded layer since the spunbonded layer is made of continuous fibers which are bonded to each other at their crossing points, while the carded staple fiber layer comprises staple fibers which are lightly bonded to each other wherever the fibers have been entangled during production of the carded web. Thus, claims 1, 3, 4, 8, 9, 12, 17 and 18 are anticipated by Lickfield et al.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 1, 2, 5 – 12, 14 – 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold (5,989,113) in view of Berger et al. (5,482,756).

Arnold discloses a nonwoven article used to polish or clean surfaces (column 1, lines 5 – 9). The nonwoven article is formed by needling or liquid or gas jets which mechanically entangle the fibers in the nonwoven fabric (column 3, lines 49 – 53). The fibers present in the fleece can be natural or synthetic fibers which are mixed together (column 3, lines 63 – 64). Natural fibers include cotton, wool, linen or hemp (column 3, lines 65 – 66). And synthetic fibers include polyester, polyamide, or aramid fibers (column 4, lines 2 – 3). The fleece material can also include a fraction of bond fibers connected at their crossing points under the influence of heat (column 4, lines 8 – 10). The bond fibers have a lower melting point than the remaining fibers 9column 4, lines 13 – 16). The fleece has a thickness of 0.3 to 5 mm, or 0.01 to 0.20 in (column 4, line 33) and a density of 0.1 to 0.5 g/cm³, or 6.2 to 31.2 lb/ft³ (column 6, line 23). The nonwoven fleece can be formed into disc or belt (column 4, lines 49 – 55). As shown in the figures, the disc has a hole in the center to allow it to be attached to a surface treatment tool, while the shape of the endless belt allows it to be wrapped onto a surface treatment tool. Arnold fails to teach applying a backing layer to the nonwoven fleece.

Berger et al. is a nonwoven article suitable for abrasive and polishing belts pads and discs (column 2, lines 13 – 15). Berger et al. discloses that it is know to reinforce nonwoven polishing materials by bonding the nonwoven web into a support web (column 1, lines 32 – 50). Berger et al. discloses a laminate polishing material which comprises a fibrous layer, a woven stretch resistant cloth and a polymeric layer (column 3, lines 1 – 8). The fibrous layer is needle-punched to the woven fabric layer and projects a fibrous loops on the opposite side of the woven fabric as

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shown in Figure 6 (column 3, lines 20 – 25). The woven fabric is stretch resistant (column 4, lines 33 – 36). Hence, the woven fabric would reinforce the fibrous layer by providing dimensional stability and strength to the composite. The woven fabric can be made from various materials including polyester (column 4, lines 40 – 43). Further, Berger et al. teaches adding a polymeric layer to the side of the woven fabric opposite of the fibrous layer (column 4, lines 50 – 52). The polymeric layer provides the composite with increased stiffness and durability (column 4, lines 56 – 60). The polymeric layer is a thermoplastic extruded polymer such as polyester (column 5, lines 62 – 67). Finally, Berger et al. also teaches that the composite material is flexible and resistant to heat buildup (column 5, lines 44 – 47). Thus, it would have been obvious for one having ordinary skill in the art to add the reinforcing layer taught by Berger et al. to the nonwoven polishing fleece taught by Arnold et al. to make the polishing fabric stronger, more dimensional stable, and more durable, which would increase the life of the polishing cloth. Finally, the woven fabric or the polymeric layer would individually or combined have a greater tensile strength and dimensional stability, and a smaller elongation at break than the nonwoven fleece layer.

Further, even though Arnold discloses blends of natural, synthetic, and binder fibers can be used in the nonwoven fleece, Arnold fails to teach the amount of each type of fiber. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the claimed amount of natural, synthetic, and binder fibers, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 105 USPQ 233 (CCPA 1955). One of ordinary skill in the art would optimize the

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properties of the nonwoven laminate by adding the natural fibers to modify the absorbency and softness of the fleece, by adding synthetic fibers to modify the strength and abrasion resistance, and by adding the binder fibers to modify the resilience and recovery of the fleece. Thus, claims 1, 2, 5 – 10, 12, 14 – 19, and 22 – 24 are rejected.

Although the limitations of break strength and elongation at break are not explicitly taught by Arnold or Berger et al., it is reasonable to presume that said limitations would be met by the combination of the two references. Support for said presumption is found in the use of similar materials (i.e. a needled nonwoven fleece layer, a reinforcing backing layer) and in the similar production steps (i.e. needling the nonwoven fleece to the reinforcing backing layer) used to produce the polishing material. The burden is upon the Applicant to prove otherwise. Thus, claims 20, 21, and 25 are rejected.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnold in view of Berger et al. as applied to claim 1 above, and further in view of Matsunaga et al. (5,554,442).

The features of Arnold and Berger et al. have been set forth above. Arnold fails to teach the type of low melt binder fibers used in the nonwoven fleece. Matsunaga et al. is drawn to a nonwoven fabric bonded by binder fibers. The binder fiber have a low melting point and made from a polyester copolymer (abstract). Matsunaga et al. teaches the nonwoven fabric is resistant to flattening during prolonged use (abstract). Thus, it would have been obvious for one having ordinary skill in the art to use a polyester binder fiber as taught by Matsunaga et al. in the nonwoven fleece taught by Arnold since the fiber has a low melting point and produces a fabric which is resistant to flattening during prolonged use. Also, it would have been obvious to one having ordinary skill in the art to choose a polyester binder fiber, since it has been held to be

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within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. Thus, claim 13 is rejected.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (9:00 - 5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo
September 28, 2002



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